

FoM2 Unit 7 - Parent Function Review

Name _____

Given: $y = a(x - h)^2 + k$

1. Describe the effect of **a** on the graph.
2. Describe the effect of **h** on the graph.
3. Describe the effect of **k** on the graph.

Identify the parent function name and describe the transformations for each function.

4. $g(x) = 3(x - 1)^2 - 6$ Name: _____

Transformations: _____

5. $f(x) = 5(x - 2)^3 - 11$ Name: _____

Transformations: _____

6. $h(x) = \frac{2}{3}|x + 6|$ Name: _____

Transformations: _____

7. $f(x) = -\sqrt{x - 3}$ Name: _____

Transformations: _____

8. What is the effect on the graph of the function $y = x^2 + 2$ when it is changed to $y = x^2 - 3$?

Name the Parent Function. List the transformations. Graph each equation.

9. $y = (x + 2)^2 - 3$

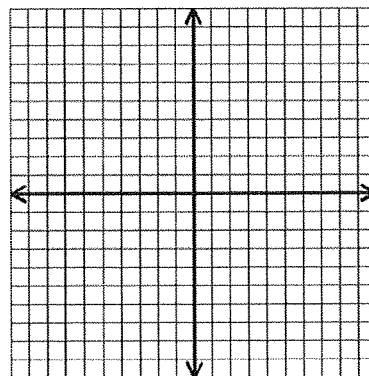
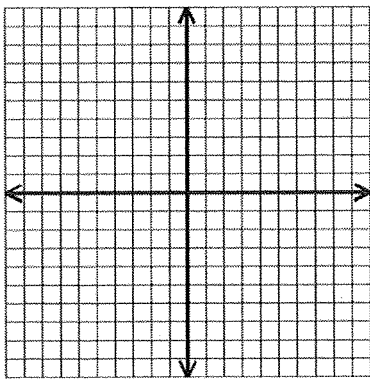
Parent:

Transformations:

10. $y = 2|x - 3| + 2$

Parent :

Transformations:

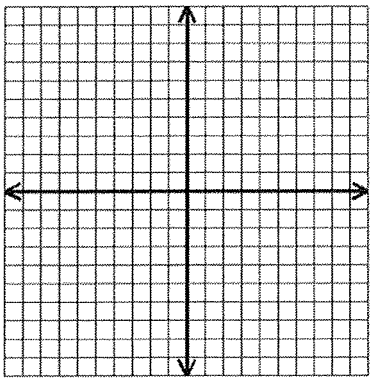


Name the Parent Function. List the transformations. Graph each equation.

11. $y = 2^{x-1} - 3$

Parent:

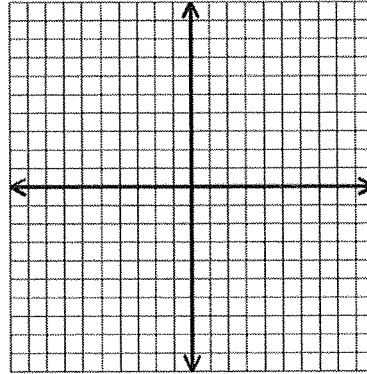
Transformations:



12. $y = \sqrt{x+5}$

Parent :

Transformations:



13. Write the function $f(x)$ for each of these transformations:

- a) quadratic – right 3 units
- b) absolute value – left 5 units, down 2 units
- c) square root – vertical stretch by 4, up 5 units
- d) cube root – right 11 units, up 8 units
- e) exponential base 2 – left 1 unit
- f) cubic – vertical compression by $\frac{2}{3}$, down 5 units

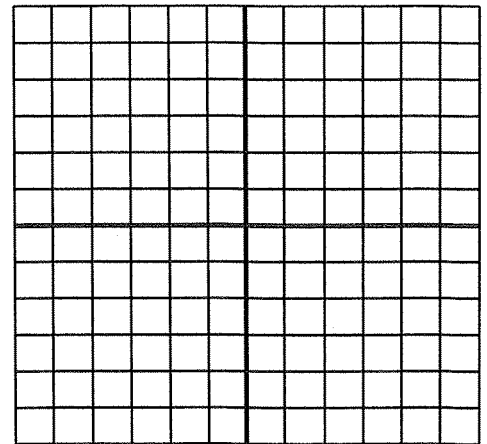
14. Below are tables of points for two functions. Describe the transformation.

Parent function

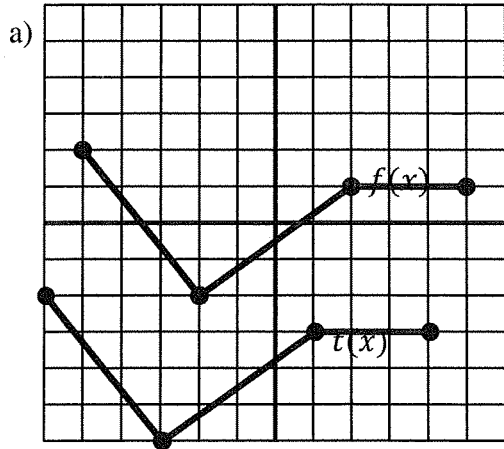
x	y
-1	3
3	5
2	4

Translated function

x	y
7	-1
11	1
10	0

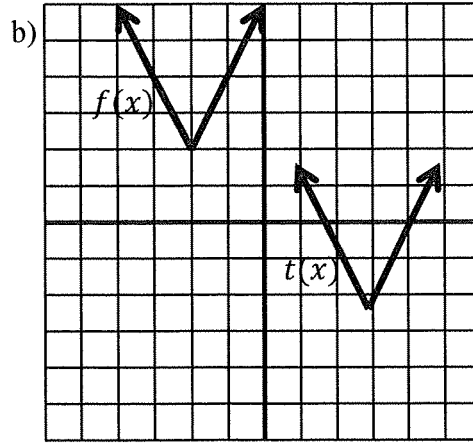


15. Describe each transformation. Then write an equation for $t(x)$ in terms of $f(x)$.



What is the domain and range of $f(x)$?

What is the domain and range of $t(x)$?



What is the domain and range of $f(x)$?

What is the domain and range of $t(x)$?

Find the domain and range for each function. Then describe the end behavior! *increasing/decreasing*

16. $y = -(x-5)^3$ Domain: _____ Range: _____

End Behavior: _____ *Inc/Dec:* _____

17. $y = -3\sqrt{x+2}$ Domain: _____ Range: _____

End Behavior: _____ *Inc/Dec:* _____

18. $y = 3^{x+2}$ Domain: _____ Range: _____

End Behavior: _____ *Inc/Dec:* _____

19. $y = \frac{1}{2}(x+1)^2$ Domain: _____ Range: _____

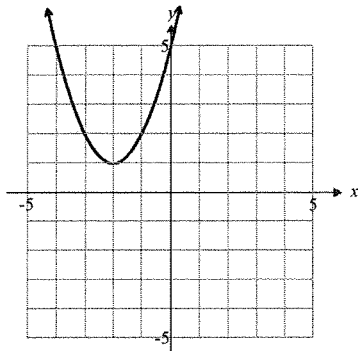
End Behavior: _____ *Inc/Dec:* _____

20. $y = \sqrt[3]{x+4} - 2$ Domain: _____ Range: _____

End Behavior: _____ *Inc/Dec:* _____

Each graph is the result of applying a sequence of transformations to the graph of one of the parent functions (see Page 2). Identify the parent function, describe the transformation, and write an equation for the given graph.

21)

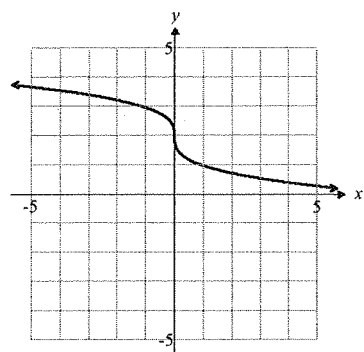


a. Name of parent function:

b. Describe transformation:

c. Equation:

22)

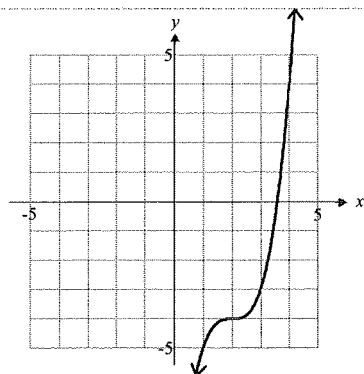


a. Name of parent function:

b. Describe transformation:

c. Equation:

23)

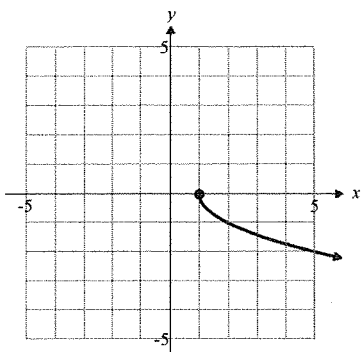


a. Name of parent function:

b. Describe transformation:

c. Equation:

24)



a. Name of parent function:

b. Describe transformation:

c. Equation: